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Design for experience – a public service design approach in the age of digitalization

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ABSTRACT

This article contributes a novel approach to public service design in the age of digitalization. Termed 'design for experience', this approach builds on developments in the fields of digitalization, user experience, and service design, as well as the integration of the service ecosystem concept. 'Design for experience' aims to facilitate value propositions that support public service users to co-create value in their life-worlds. Achieving this requires a multi-level approach because a user's value creation process is embedded in a multi-actor configuration and governed by institutions. A conceptual framework is offered, alongside guidance in applying the 'design for experience' approach.

KEYWORDS Service design; user experience; service ecosystem; digitalization; public service logic

Introduction

Consider a public service organization (PSO) that seeks to leverage the opportunities provided by digital technology in order to enhance the experience for public service users. Such a service design initiative is certainly not out of the ordinary. In contrast, it fits well with the current trend whereby public services are becoming both increasingly automated (Kattel, Lember, and Piret 2020) and 'smart' (Timeus, Vinaixa, and Pardo-Bosch. 2020). However, it has also been noted that the trend towards digitalization is accompanied by a sense of 'techno-optimism' (Lember, Brandsen, and Piret 2019; Walker, Milne, and Weinberg 2019), which can lead to the risk of new digital solutions being implemented without a full understanding of the consequences for the public service user's value creation process (Lindgren et al. 2019). Adding to this risk is the fact that many PSOs – by drawing on the New Public Management tradition – are focusing their service design efforts on intra-organizational processes and service delivery, with limited attention being paid to the actual user experience (Osborne et al. 2015; Eriksson and Hellström 2020). In service design, this focus is referred to as an 'inside-out' approach and builds on the assumption that value can be created by the organization and delivered to customers by means of products and services (e.g., Holmlid 2009).

Recent studies, and in particular those contributing to the public service logic (PSL), highlight that an inside-out approach to public service design is problematic because

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PSOs cannot deliver value, instead only being able to offer value propositions (in the form of a resource configuration), which the public service user then may integrate into her/his value creation process (Hardyman, Kitchener, and Daunt 2019; Eriksson et al. 2020). Developing this standpoint, Eriksson et al. (2020), alongside others (e.g., Petrescu 2019; Trischler and Charles 2019; Engen et al. 2020), additionally show that public service users co-create value in collaboration with many actors and thus call for PSL to move beyond its traditional co-production stance. In this article, co-production is understood as a dyadic concept that focuses on the interaction, relationship and collaboration between public service professionals and citizens (e.g. Brandsen and Honingh 2016; Osborne, Radnor, and Strokosch 2016), while co-creation takes a multi-actor stance in order to highlight the fact that public service users co-create value by integrating resources from many different sources (Trischler and Charles 2019).

The extension of PSL beyond co-production, alongside the ongoing push towards digitalization, raises the question of how public services should be designed. Are traditional user-centric design approaches (e.g., the service blueprint or the customer journey map) still suitable, or is a different approach required? Who and what defines a user experience within the complex multi-actor configuration underpinning a public service user's value creation process? What implications does the adoption of digital technology have for public service provision? This article discusses these questions by reviewing recent developments in the fields of digitalization, user experience, and service design. In addition, by integrating the service ecosystem concept, the article proposes 'design for experience' as an approach to public service design. This approach asserts that the integration of digital technology into a PSO's value proposition requires a systemic lens that takes into account the interplay between micro-level user activities, the meso-level actor configuration, and macro-level institutions.

From a theoretical standpoint, this article proposes that two concepts are fundamental to advance public service design in the age of digitalization. The first concept is the user experience, defined as the subjective, context-specific, and phenomenologically user-defined outcome of the value creation process (Jaakkola et al. 2015). This definition highlights that an experience is uniquely determined by public service users based on the value co-creation activities taking place in their lifeworld. We use the term 'design for experience' to emphasize that PSOs can neither design nor deliver user experiences; they can only determine the conditions for supporting public service users in creating value and, as an outcome, their desired experiences (Heinonen et al. 2010; Grönroos and Voima 2013). The second concept is the service ecosystem. The service ecosystem has been developed as part of the Service-Dominant Logic (S-D Logic) in order to provide a concept that specifies value co-creation activities both as multi-actor in nature and coordinated by institutions (Vargo and Lusch 2017). We propose that the service ecosystem concept helps to move public service design beyond a user-centric stance and captures both the multi-actor configuration and the institutional arrangement underpinning a user's value creation process. We further suggest that adopting such a systemic approach is important in the age of digitalization when public service users are connected actors who are not bound to one PSO but who co-create value, at times even completely independently of the focal PSO (Lember, Brandsen, and Piret 2019; Eriksson and Hellström 2020).

From a practical standpoint, we argue that our proposed 'design for experience' approach and its link to digitalization are highly relevant to public management. As we

discuss in this article, the integration of digital technology into a PSO's value proposition requires a clear understanding of the user's underlying beliefs, practices and needs because not all user groups are better off as a result and nor do they perceive digitalization-related changes as improvements (e.g., Meuter et al. 2003; Townsend 2013; Anderson et al. 2016; Lember, Brandsen, and Piret 2019). To generate such an understanding, a PSO needs to dive into its users' lifeworlds and explore how digital technology alters their value creation process and experience as an outcome. In turn, facilitating the conditions for a positive user experience is the foundation for building a strong relationship with the focal PSO (Osborne et al. 2015), realizing behavioural change (Tromp, Hekkert, and Verbeek 2011), and co-producing public service outcomes more effectively and efficiently (Van Eijk 2018; Loeffler and Bovaird 2016). We propose that 'design for experience' contributes a theoretical lens and practical approach which recognizes that user experiences take place in the user's lifeworld as a result of value co-creation activities with multiple actors, which are in turn guided by institutions.

Digitalization and its consequences for value creation

In general terms, digitalization can be described as the process of adopting and using digital technology within individual, organizational and societal contexts (Legner et al. 2017). As illustrated by Aceto, Persico, and Antonio (2018), and later on by Lember, Brandsen, and Piret (2019), digital technology can have different functionalities, including (a) sensing (access to new forms of data through, for example, smart devices); (b) communication (new ways of communication and information exchange); (c) processing (new ways of data collection, analysis and decision-making using AI-based programs, cloud computing, big data analytics and machine learning); and (d) actuation (the replacement of human-to-human interaction with human-to-machine or machine-to-machine interaction). As described by the same studies, digitalization can affect co-production and co-creation activities in various ways, for example, through changes in agency, dependency, engagement, roles, and relationships between public service users and PSOs. It is therefore essential for any PSO to understand how the integration of digital technology into its value proposition may change the nature of co-production with its users from a narrow stance, and the public service user's value co-creation activities more broadly.

We outline here two additional perspectives on digitalization which are relevant to public service design. First, we conceptualize digital technology as a type of resource, more specifically, as an operant resource. In contrast to operand resources, which are static, digital technology is constantly evolving through use and capable of generating new knowledge based on the collection and analysis of data (Vargo, Wieland, and Akaka 2015). Defining technology as an operant resource is important because it implies that humans can be replaced by technology in service provision, interactions, and even decision-making, as is evidenced by the increasing use of smart assistants, service robots, and AI (Van Doorn et al. 2017; Lember, Brandsen, and Piret 2019). In addition, as an operant resource, technology advancements should not only be seen as a new resource that can be integrated into a value proposition, but also as something that can be used to combine existing resources in innovative new ways (Maglio and Spohrer 2013). To illustrate this, in healthcare, AI-based programs are used tap into the large volume of data which assists clinical practice by providing up-to-date medical

information or by reducing diagnostic and therapeutic errors (Noorbakhsh-Sabet et al. 2019).

Second, by taking a PSL perspective, we define digital technology as a resource that the public service user may or may not integrate into her/his own value creation process. However, we also note that the question of integration is not merely determined by the user's motivation to do so, but by whether or not he/she actually has access to other resources required for the effective use of digital technology (e.g., knowledge, network, platform, devices, etc.) (cf. Eriksson and Hellström 2020). A classic example illustrating our viewpoint is self-service technology – while on the one hand, it enables users to be more productive and independent, on the other, it requires them to be more knowledgeable and to even take greater responsibility for the service outcome (Anderson et al. 2016; Meuter et al. 2003).

In fact, many digitalized services are nowadays designed on the basis of the assumption that users have access to high-speed Internet, possess smart devices, and know how to use them. This assumption can be problematic because it can result in the exclusion of some user groups – in many cases, the most vulnerable social groups – from public services (Lember 2018; Townsend 2013). For example, Nunan and Di Domenico (2019) find that elderly people are not able to keep up with the pace of technological innovation, leading to the older generations facing an increasing 'digital divide'. Further, insufficient regulations and norms concerning data privacy, data security and the use of personal information are causing public service users, and in especially vulnerable groups such as children, immigrants, or people with low literacy levels, to be put at risk (Lindgren et al. 2019; Walker, Milne, and Weinberg 2019). Putting the digital divide into numbers, Parasuraman and Colby (2015) have developed a technology-related consumer segmentation which classifies 38% of a US sample as 'skeptics' and 16% as 'avoiders'. Lower percentages are reported by Hallikainen, Alamäki, and Laukkanen (2018), segmenting 11% of a large European sample as 'anti-digital' and 17% as 'anti-social media'.

The above findings imply that a 'one-size fits all model', or an inside-out design approach to digitalization, may lead to (unintended) negative consequences for public service provision. In this context, an inside-out approach focuses on the capabilities and resources required for a PSO aiming to adopt and integrate digital technology in its service operations. While these aspects are important from an organizational perspective (Panagiotopoulos, Klievink, and Cordella 2019; Vial 2019), this article proposes a different design approach which starts with exploring the user's lifeworld and the question of how changes through digitalization affect the public service user's value creation process and experience as an outcome. Moreover, since public service provision, or more specifically the realization of a PSO's value proposition, involves a configuration of multiple actors (Eriksson et al. 2020, Trischler and Charles 2019), this article asserts that public service design needs to adopt a systemic lens. The next section elaborates on these arguments by examining developments in user experience research and discussing the resulting implications for public service design.

Developments in user experience research and implications for public service design

The user experience concept has often been criticized for its conceptual ambiguity, leading to confusion over what an experience entails and how service providers can act on it

through service design. However, two recent systematic literature reviews (i.e., Becker and Jaakkola 2020; De Keyser et al. 2020) go a significant way towards addressing this problem and moving the concept forward. Becker and Jaakkola (2020) find that the scope of the experience concept stretches from a narrow dyadic view, defining an experience as user responses to a service provider's stimuli, to a broader systemic view, which defines an experience as the outcome of the service user's value creation process. In turn, De Keyser et al. (2020) define an experience as a value judgement made by the underlying service user, formed via touchpoints within and beyond the control of the underlying service provider as well as influenced by contextual factors. We build on these studies by linking key developments in user experience research with public service design.

User experience and its design from a dyadic viewpoint

Traditionally, an experience was seen as something designed and orchestrated by the service provider *for* the user (Haeckel, Carbone, and Berry 2003). The assumption, in doing so, is that the service provider is in control and can steer an experience during service delivery whereby the user interacts with the provider's physical environment, front-line employees, and other service users (Bitner 1992; Lim and Kim 2018). Service design, from this perspective, concerns the interface and dyadic exchange between public service users and the PSO. For example, the service blueprint analyzes the interactions between the user and the service provider, including the organization-internal support processes, in order to guide service delivery (re)design (Shostack 1984, Bitner et al. 2008, Radnor et al. 2014). Another service design method is the critical incident technique, which aims to identify interactions (also referred to as 'moments of truth'; Grönroos 1990) especially important for creating positive user experiences (Bitner et al., 1990).

The dyadic approach is also well established in the public management literature, most prominently through the extensive contributions to the co-production concept. However, in comparison with the user experience concept, co-production research has a stronger focus on the interaction between public service professionals and service users. For example, a number of studies explore the competencies, characteristics and motivations public service professionals need to possess in order to activate citizens and enable them to deploy their resources for publicly-desired outcomes (e.g., Nederhand and Meerkerk 2018; Van Eijk 2018; Vanleene, Voets, and Verschuere 2019). In contrast, the user experience concept adopts a stronger user-centric stance to determine the service user's response to the different elements of the service offering. For example, the fields of user-centric design or UX design have a long tradition of analysing and improving the experience of a specific product or service (Hassenzahl and Tractinsky 2006). In a service offering, UX design elements include the physical environment, sensory cues, digital interfaces, and interactions with employees or other users (Johnston and Kong 2011). The user experience is then the user's response to these design elements and typically measured in terms of emotional, cognitive, sensorial, social and behavioural dimensions, as well as ranges between positive, negative, and indifferent (De Keyser et al. 2020).

User experience and its design from a systemic standpoint

During recent years, the discourse around the experience concept has increasingly been shifting towards adopting a phenomenological and systemic stance (Jaakkola

et al. 2015; Becker and Jaakkola 2020). A key influence on this shift has been the 10th fundamental premise of the S-D Logic, asserting that value cannot be predefined by the service provider and that, instead, it is the beneficiary actor (e.g., the public service user) who experientially determines value on the basis of the specificity of his/her context (Vargo and Lusch 2008). Studies show that the user experience can be heavily influenced by context-specific factors, for example time, location, and even societal structures (Trischler and Scott 2016; Eriksson et al. 2020), as well as encompasses imaginary dimensions of the past, present, and future (Helkkula, Kelleher, and Pihlström 2012).

The same perspective on value has been adopted by the PSL, which initially drew on the S-D Logic (see Osborne, Radnor, and Nasi 2013) and then on the service logic (see Osborne 2018) to move public management theory away from a manufacturing towards a service approach. The PSL advocates that a fundamental aspect of achieving publicly-desired outcomes is understanding and supporting users in their (public) value creation efforts. For example, Osborne (2018) suggests that the basic unit of analysis of the PSL is exploring how a public service offering can be designed 'to facilitate the co-creation of value by service users'. In line with the PSL, service design scholars recognize that it is not possible to fully imagine, plan, or define outputs such as products, services, or experiences (Wetter-Edman et al. 2014; Kimbell 2011). Public service design has thus shifted away from a service production and delivery approach towards exploring possible future use situations in the user's lifeworld and designing value propositions aimed at supporting the creation of value in these situations (Trischler et al. 2018; Trischler, Dietrich, and Rundle-Thiele. 2019). Ultimately, however, it is the service user who decides what resources she/he integrates into her/his value creation process – or, simply put, which individual pathway he/she takes in order to achieve his/her goals.

Shifting the focus of value creation away from the service provider towards the service user is significant because it implies that PSOs cannot design experiences per se but only design value propositions aimed at supporting users in their value creation activities and, as an outcome, their desired experiences (Teixeira et al. 2012). We use the term 'design for experience' to highlight this implication for public service design. Moreover, this shift implies that a user experience needs not be restricted to dyadic PSO-user interactions; instead, it is the result of users co-creating value with multiple actors (Eriksson and Hellström 2020). In fact, studies conducted in both the private and public sectors, show that service users often co-create value beyond boundaries, or at times even completely independently of the underlying service provider (e.g., McColl-Kennedy et al. 2012; Bolton et al. 2018; DeMonaco et al. 2019). This independency is further leveraged by technology advancements (e.g., platform innovation) because these enable users to self-organize and, in so doing, even completely bypass PSOs (Bekkers et al. 2011; Lember, Brandsen, and Piret 2019).

All this means that public service design efforts must extend beyond the focal PSO and adopt a systemic approach. Consider a PSO seeking to change its service offering from a physical to a digital format in response to the COVID-19 pandemic. This organization needs to evaluate how its initiative affects the activities and subsequent resource configuration that its different users are drawing upon to create value (e.g., the way citizens access or use the service). For example, users with a low level of technology readiness may (have to) seek help from their relatives or friends in order to gain full access to digitalized services. In turn, people living in remote areas or low-

income households might not have the required broadband speed, or devices, to access such services. Thus, the PSO needs to understand its users' co-creation activities in relation to the context and resource configuration involving multiple actors. Recent developments and methods in service design that consider these systemic aspects include the customer journey map (Følstad and Kvale 2018), the service delivery network (Tax, McCutcheon, and Wilkinson 2013), and multilevel service design (Patrício et al. 2011).

However, we additionally argue that public service design needs to capture the institutional arrangement underpinning value co-creation activities. Our argument is supported by the most recent update of the S-D Logic, proposing that value creation activities are governed by institutions (Vargo and Lusch 2016), as well as practice theory defining practices as institutionalized activities (Schatzki 2002). Many public services (e.g., policing, public libraries, and healthcare facilities) are linked with deeply rooted rules, norms, and assumptions. For example, healthcare systems, including related clinical workflows, infrastructures and policy measures, are traditionally designed to facilitate face-to-face interactions between healthcare professionals and patients (Agarwal et al. 2010; Fisk, Livingstone, and Pit 2020; Keesara, Jonas, and Schulman 2020). How would then a patient perceive a change towards digitalized healthcare whereby consulting with his/her doctor occurs online, via a chat window or a video link? While such a solution may be cost-effective and convenient from the healthcare provider's perspective, it still requires careful consideration of the patient's practices linked to 'seeing the doctor'. Otherwise, and as discussed by recent healthcare studies (e.g., Fox and Connolly 2018; Laurenza et al. 2018; Golinelli et al. 2020), the digital service may not be perceived as legitimate and may not be adopted by patients (even when these have full access to the service). From this standpoint, it is hardly surprising that even neatly-designed public services fail – they do 'not account for actors' shared rules, norms, and beliefs that need to be transformed' (Vink et al. 2020, 1). As we discuss next, the service ecosystem concept not only helps to move public service design towards a systemic approach, but also to consider the role of institutions more closely.

The service ecosystem as a foundation for public service design

A service ecosystem is 'a relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange' (Vargo and Lusch 2016, 10–11). The service ecosystem forms a key concept of the S-D Logic because it provides the unit of analysis of value co-creation activities among actors within a dynamic system that is coordinated by institutional arrangements (Vargo and Lusch 2017). It defines actors as nested within, or as a part of, a larger system, meaning that individual actors' activities on the micro-level both affect and are affected by activities on the meso- and macro-levels. The micro-level focuses on the user's lifeworld including the set of activities a public service user pursues in order to reach her/his personal goals. In turn, the meso-level connects user activities with other ecosystem actors, thus depicts the multi-actor configuration underlying the co-creation of value. Finally, the macro-level describes the governance mechanism of institutions; that is, the rules, norms, meanings, and symbols affecting and being affected by value co-creation activities between system actors (Vargo and Lusch 2016). While originally developed in marketing research, the

service ecosystem is finding increasing levels of application in both the public management literature and PSL in particular. For example, Engen et al. (2020) use a service ecosystems lens to show how value is co-destroyed among interacting actors within a public service, while Trischler and Charles (2019) apply the service ecosystem concept to develop a multi-actor and multi-level perspective on public policy analysis and design.

In this article, we suggest that the service ecosystem concept informs public service design in two important ways. First, the service ecosystem helps to aggregate the overlapping and nested system layers underpinning a user's value creation process. It recognizes that individual user activities do not happen in isolation but are embedded within an often complex value configuration consisting of many actors whose resource integration and service exchange activities are guided by institutions (Edvardsson et al. 2014). In particular, higher-order effects, for example renegotiations between competing practices (Nicolini and Monteiro 2016) or institutional work required for innovation (Koskela-Huotari et al. 2016), are frequently overlooked but nevertheless important elements of service design (Vink et al. 2020).

Second, the service ecosystem recognizes that the public service user is an actor who, similarly to PSOs and other actors in the ecosystem, engages in the co-creation of value rather than passively 'consuming' public services. Vargo and Lusch (2011) call for a rethinking of the conventional perspective that separates service 'production' and 'consumption' processes, whereby organizations are considered to be the creators and users the destroyers of value. This rethinking of the public service user's role is important because digitalization leads to changes in agency, for example by enhancing user access to information, decreasing the PSO's control over service usage, and redefining the provider-user relationship (Lember, Brandsen, and Piret 2019; Walker, Milne, and Weinberg 2019). On a broader scale, this is evidenced by public service users driving innovation processes (Baldwin and Eric 2011; DeMonaco et al. 2019), participating in co-design activities (Trischler, Dietrich, and Rundle-Thiele. 2019), and taking part in the commissioning of public services and outcomes (Loeffler and Bovaird 2019). These studies showcase the fact that public service users are not passive recipients of value, or bound to a single organization, but are resource integrators who co-create value and, as an outcome, their unique experiences by combining resources from many different sources, including PSOs, private sector firms, or social networks.

Table 1 summarizes developments in user experience research and outlines implications related to public service design. This study contributes to the third development – the service ecosystem perspective – by proposing 'design for experience' as an approach to public service design in the age of digitalization. In the next section, we outline the key premises and implications underpinning the 'design for experience' approach in direct link to the service ecosystem concept.

'Design for experience' as an approach to public service design

In operationalizing the service ecosystem concept, it is important to set some form of boundary around the multi-actor configuration underpinning value co-creation activities. To do this, we draw on innovation research which defines the realization of a value proposition as the boundary of an ecosystem (Adner 2017, Thomas and Autio 2019). We argue that the same logic can be applied to a public service user's value creation process;

Table 1. Developments in user experience research and related implications for public service design.

Perspective	Assumptions	Implications for public service design
Provider-centric perspective An experience for the service user is orchestrated by the organization.	- An experience is the user's response to an organization's offerings and actions and has emotional, cognitive, sensorial, social and behavioural dimensions. - The organization manages and facilitates user experiences.	*Service delivery system design* To create superior experiences, service designers need to consider the interplay between backstage and frontstage, the presence of other service users, and the service infrastructure, including technology-enabled, multi-interface service systems.
User-centric perspective An experience is the result of the service user co-creating value with multiple actors.	- An experience is subjective, context-specific and phenomenologically determined by the service user as an outcome of his/her value creation process. - The service user responds to different organization-designed touchpoints, alongside other touchpoints that are not under the organization's control.	*Customer journey and touchpoint design* To support service users in their value co-creation activities, and as an outcome of their desired experiences, service designers need toexplore the specific circumstances surrounding the user's value creation process, including touchpoints within and beyond the PSO's sphere.
Service ecosystem perspective An experience is the result of the service user co-creating value with multiple actors, which in turn is guided by institutions.	- An experience is subjective, context-specific and phenomenologically determined by the service user as an outcome of his/her value creation activities. - Institutions both affect and are affected by value co-creation activities.	*Design for experience* To support service users in their value co-creation activities, and as an outcome of their desired experiences, service designers need to generate a holistic picture of the complex interplay between micro-level user activities, the meso-level actor configuration, and macro-level institutions.

rather than interacting with PSOs only to create value, he/she integrates resources from a configuration of different actors, for example PSOs, NGOs, private firms, peers, etc. Setting this boundary around the user's value creation process helps to bring clarity as regards what does and does not contribute to a user experience.

Moreover, a service ecosystem consists of nested or overlapping systems (Vargo and Lusch 2016). In line with Vargo and Lusch (2016) and as described above, we categorize these system layers into (1) the micro-level (i.e., the user's lifeworld), (2) the meso-level (i.e., the multi-actor configuration), and (3) the macro-level (institutions guiding value co-creation activities). Figure 1 depicts these ecosystem layers in relation to an illustration of how the integration of digital technology leads to both new ways of value creation and the user experience as the outcome. Below, we build on Figure 1 by linking each ecosystem layer with our proposed 'design for experience' approach.

The micro-level: diving into public service users' lifeworlds

Starting at the micro-level, we argue that the first step for 'design for experience' is building an in-depth understanding of the value creation process taking place in the public service user's lifeworld. Only then can a PSO determine how its value

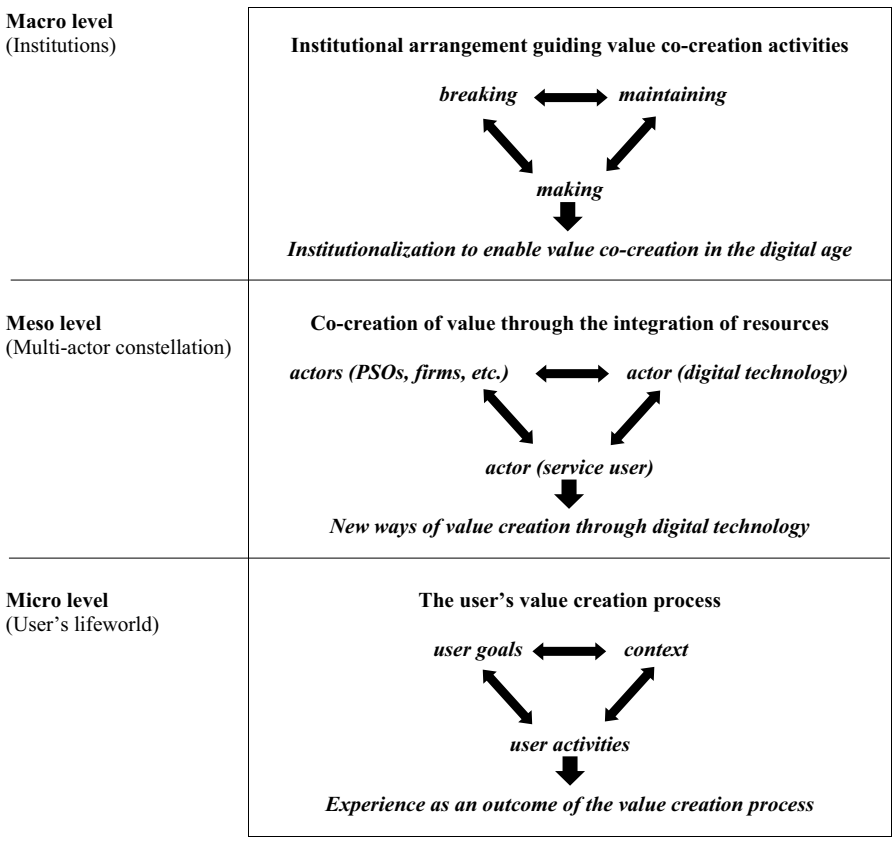

Figure 1. Pathing new ways of value creation through the integration of digital technology.

proposition may be adopted, used and ultimately experienced by its users. This starting point aligns closely with PSL, which takes 'the service user as the central locus of value co-creation' (Osborne 2018, 228). However, we further argue that the analysis cannot be limited to interaction with the PSO's service offering, but must include all activities that a public service user pursues in order to reach her/his personal goals, and the context in which these activities take place. Our argument is supported by expansive learning theory (Engeström 2001) asserting that a lifeworld should be seen as an 'activity system' which shapes, and in turn, is shaped by the service user's actions.

For example, a public service initiative seeking to reduce household food waste needs to understand the activities around food planning, shopping, storing, cooking, and eating, which are deeply entangled in the routines of consumers' everyday lives (Quested et al. 2013). Based on these insights, a solution can be designed and positioned in such a way that it effectively taps into specific situations in which food is wasted, nudging the target group towards changing its behaviour (Kim et al. 2020). Taking another example, the key to effective healthcare service provision is understanding the patient's practices, needs, and motivations underpinning service usage (Engström and Elg 2015; Hardyman, Kitchener, and Daunt 2019; McColl-Kennedy et al. 2012). Some patients may seek to be closely engaged with their healthcare providers, not only co-producing during service provision but also during other processes, for example service planning and design activities (Engström and Elg 2015; Hardyman, Kitchener, and Daunt 2019). In contrast, other patients may want to 'receive' a treatment, with as little engagement as possible, or alternatively even detach themselves from the underlying healthcare provider and start using alternative treatment methods, access complementary therapies from other providers, or seek assistance from friends and relatives. Diving into the public service user's lifeworld is thus important when it comes to more fully exploring the activities, goals and context underpinning his/her value creation process.

Extending the micro-level analysis beyond PSO-user interactions is especially relevant when the aim is integrating digital technology into a value proposition because this can lead to further independency or the detachment of public service users. Linking to the healthcare example above, consider the replacement of service professionals by smart assistants or service robots: While a weakly-engaged patient might greatly benefit from such a solution because she/he can access information or gain feedback much more conveniently, a strongly-engaged patient may experience some sense of exclusion or disconnection. Numerous studies show that public service professionals are key to building relationships and trust with public service users as a precondition of ongoing engagement and collaboration (e.g., Trischler and Scott 2016; Van Eijk and Steen 2014; Vanleene, Voets, and Verschuere 2019). Thus, and in line with Lember, Brandsen, and Piret (2019), we stress that PSOs need to carefully evaluate any (unintended) consequences the integration of digital technology may have as regards the way different user groups engage with the organization, as well as use and experience its services.

The meso-level: coordinating value propositions within a multi-actor configuration

A key tenet of this study is that PSOs cannot design user experiences but should see themselves in a support role where they support citizens in their value creation

activities through the provision of suitable resources (bundled in a value proposition). The 7th foundational premise of the S-D Logic underscores our standpoint by asserting that organizations cannot deliver value, they can only offer value propositions (Vargo and Lusch 2016). Further, since public service users do not limit their value co-creation activities to interactions with single organizations, we propose that 'design for experience' requires the coordination of a PSO's value proposition with other relevant ecosystem actors. Our proposition is in line with Eriksson et al. (2020) who illustrate, in the context of Swedish healthcare, that collaborating PSOs having a coordinated value proposition is important for coherent service provision. By drawing on innovation ecosystem research, we go one step further and assert that the realization of a value proposition depends not only on PSOs collaborating, but on many different actors who are not necessarily formally connected (Thomas and Autio 2019). To illustrate our standpoint, the design and provision of digitalized services (e.g., the development of an e-health platform) depends on other ecosystem actors developing smart devices, advancing browser and network security, or increasing broadband speeds. Public service provision and the user's value creation thus entail a multi-actor configuration.

As discussed in the section 'Digitalization and its consequences for value creation', we define digital technology as an operant resource with the ability to co-create value. This means that, within a service ecosystem, digital technology can be compared to an actor providing access to new resources (e.g., new information/knowledge) or combining existing resources in new ways (e.g., through platforms). For PSOs, this opens up new opportunities as well as sets new standards for service provision; while for public service users, it enables new ways of creating value. For example, enabled by digital technology, citizens can connect, exchange, and collaborate with other ecosystem actors to address their individual needs or achieve their personal goals. As found in studies conducted in healthcare and sustainability, citizens may even initiate, collaboratively develop, and share innovations peer-to-peer, with no underlying organization involved (DeMonaco et al. 2019; Trischler, Johnson, and Kristensson 2020). This enabling factor of digital technology underscores our standpoint above and the meso-level illustration in Figure 1: Coordinating a PSO's value proposition, so that it supports users in creating value in their lifeworlds, requires a multi-actor stance that defines public service users, digital technology, and other ecosystem actors as possible resource integrators and value co-creators.

The macro-level: institutionalization to enable new ways of value co-creation

Finally, on the macro-level, we argue that 'design for experience' needs to consider the requirement for institutional work. This is because actors' value co-creation activities are not random but guided by institutional arrangements in terms of being the 'building blocks for increasingly complex and interrelated resource-integration and service-exchange activities' (Vargo and Lusch 2016, 18). The reconfiguration of institutions – also referred to as institutionalization – is especially important when a potential new way of value creation is competing with dominant practices (Nicolini and Monteiro 2016): Even when people are aware of a more effective way to reach their goals, they may not act on this opportunity due to being 'locked' into a specific pattern or routine (see, e.g., Thaler and Sunstein 2008). The same applies to organizations, industries, and even entire societies (Schot and Edward Steinmueller

2018). Thus, changing the way in which value is co-created on the meso-level, and user activities pursued on the micro-level, needs to be accompanied by the breaking, making and maintaining of institutions (Vargo, Wieland, and Akaka 2015; Koskela-Huotari et al. 2016; Vink et al. 2020). As the studies by Koskela-Huotari et al. (2016) and Vink et al. (2020) illustrate, for an innovation to be successful requires some of the existing institutions to be challenged and broken, while other institutions need to be maintained. Here it is important to note that institutions not only affect, but are also affected and can be shaped by service users as well as other ecosystem actors (Vargo and Lusch 2016).

To put the above standpoint on institutionalization into context, digital technology not only changes the nature of interactions between actors, but it more generally leads to a technology-integrated society characterized by new practices and norms (Walker, Milne, and Weinberg 2019). On the micro-level, these developments lead to new ways in which people use and experience traditional services or physical sites (De Keyser et al. 2020). On the meso- and macro-levels, the ongoing trend towards digitalization is constantly opening up opportunities for innovation, creating new demands, and challenging existing norms (Barrett et al. 2015). Related effects can readily be observed during the current COVID-19 pandemic: In many countries the rapid change towards digital healthcare solutions, such as telehealth or mobile health, challenge current service systems, including related policies (e.g., restrictions around telehealth consultations) and funding structures (e.g., supporting digital solutions tailored towards older people or people living in rural areas) (Fisk, Livingstone, and Pit 2020). Further, citizens and organizations have become more open to tracking and surveillance systems (which they would otherwise have seen as a threat to their individual privacy) and are sharing sensitive types of information via platforms that are not sufficiently secure (which they would otherwise not have shared digitally) (Brough and Martin 2020). The latter study also illustrates that institutionalization and related changes in value creation may not always lead to positive outcomes; in contrast, ad-hoc changes in particular can have severe consequences for both PSOs and public service users. Institutionalization, including the question of which institutions to alter and which to maintain, thus forms an important aspect of 'design for experience' in the age of digitalization.

Conclusion

In this study, we have reviewed recent developments in the fields of digitalization, user experience, and service design, in addition to integrating the service ecosystem concept in order to develop 'design for experience' as an approach to public service design in the age of digitalization. We suggest that the service ecosystem concept can help to advance public service design because it recognizes that a public service user's value creation process is embedded within a multi-actor configuration and governed by institutions. In relation to the 'design for experience' approach, this integration leads to the following three premises:

(1) Digital technology is an operant resource capable of acting on other resources to co-create value; thus, it not only transforms the way value is created by users on the micro-level, but also the interactions and connections between other ecosystem actors on the meso-level.

(2) User experiences cannot be designed by PSOs for users, nor are they dyadically determined; user experience is an outcome of the user's activities on the micro-level during which he/she integrates resources from various sources.
(3) Public service design cannot solely take a user-centric approach, instead needing to adopt a multi-actor and multi-level approach in order to fully capture the system architecture and institutional arrangement underpinning user experiences.

How should a PSO apply 'design for experience' to its service design efforts? We recommend that the PSO should apply a multi-level approach as offered by the service ecosystem concept. Starting at the micro-level, the focus should be on diving into public service users' lifeworlds and exploring why and how users engage with the underlying service in order to create value. Possible methods that can be used for this exploration are empathy design (Kouprie and Visser 2009) and co-design (Trischler et al. 2018). Then, on the meso-level, the system of actors should be mapped and include the actors' roles, interactions, and interdependencies underpinning the provision and realization of a value proposition. Systems maps are helpful because they depict not only formal but also informal connections and exchanges between ecosystem actors (Stickdorn et al. 2018). Finally, on the macro-level, the focus of investigation should be the institutional work required to enable new ways of value creation. This may also include aspects which public service users are not aware of, but which still affect their value creation activities. For example, policymaking is a powerful tool for institutionalization, yet its effect is often not fully realized by citizens (Trischler and Charles 2019).

With this article's focus on 'design for experience', the central unit of analysis – even from a systems lens – is the service user. Yet it is important to note that the adoption of digital technology has also a number of implications for PSOs, such as required changes to their capabilities, resources, and even culture. Studies show that capacity building for digital technology integration involves technical elements (e.g., skills in data analytics and information system design) as well as institutional elements (e.g., the breaking of organizational silos and the change towards flexible and adaptive structures; Castelnovo and Sorrentino 2018; Vial 2019). One possible lens that may guide PSOs in their digital transformation process is dynamic capability theory. This theory describes the processes and routines that are required to build, integrate and reconfigure resources in response to rapidly changing environments (Eisenhardt and Martin 2000). Public sector studies show that dynamic capabilities are an important precondition for PSOs designing and facilitating digital services due to their increased complexity (Klievink and Janssen 2009; Panagiotopoulos, Klievink, and Cordella 2019, Mazzucato and Kattel 2020).

We conclude our article with a call for future research. Since this article is conceptual in nature, future studies are required that apply and evaluate the proposed 'design for experience' approach. For example, one future research opportunity might be a case study that operationalizes 'design for experience' by exploring how the integration of digital technology into a public service offering both affects and is affected by user practices on the micro-level, the multi-actor configuration on the meso-level, and the institutions on the macro-level. Such a study could either focus on a specific system layer (e.g., the service user's set of activities on the micro-level) or investigate the interaction between the micro-, meso- and macro-level of the service

ecosystem (e.g., how service users' activities are shaped and shape contextual factors, the system structure, and institutions). In addition, hands-on methods are required that extend the user experience analysis beyond the customer journey in order to also capture digitally-occurring interactions, the complexity of multi-actor systems, and the institutional work required to enable novel forms of value creation. Recent research has started to develop such methods, including screencast videography (Kawaf 2019), customer experience modelling (Teixeira et al. 2012), and tools that enable actors to reflect and alter their shared beliefs and routines (Vink et al. 2019; Vink 2019). However, these developments are still in their infancy and we especially seek methods that can be applied to the public sector. Apart from new design methods, we also require a better understanding of the (unintended) consequences of integrating digital technology into public services. In doing so, research outcomes can provide service designers, public managers and policy makers with important directions on how to use advancements in digital technology to support rather than impede value creation for different user groups. We hope that the present study encourages public management scholars to further explore the exciting interplay between digitalization, user experience, and service design, and that it spurs the development of public service design methods and approaches in line with the latest developments in these fields.

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